

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application

Disposition of Claims

Claims 1, 3-4 and 12-14 are pending in this application. Claim 2 has been cancelled. Claims 1 and 12 are independent. The remaining claims depend, directly or indirectly, from claims 1 and 12.

Objections

The Examiner objected to the specification and requested that “now U.S. Patent No. 6,823,952” be added on page 1, line 6, after “filed October 26, 2000.” This reply amends the specification as requested by the Examiner. Withdrawal of the objection is respectfully requested.

Rejections under 35 U.S.C. § 112, first paragraph (new matter)

Claims 1-4 and 12-14 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement because they contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specific ground for the rejection is that the claimed “heating” step has no support from the specification as originally filed. Without agreeing with the Examiner’s position, claims 1 and 12 have been amended by this reply to remove the heating

step, rendering the rejection moot. Accordingly, withdrawal of this §112 rejection is respectfully requested.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 1-4 and 12-14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 12 have been amended by this reply. To the extent the rejections still apply to the claims as amended, the rejections are respectfully traversed.

With respect to items 1 and 6, the Examiner asserts it is not clear how the mounting pad is formed, as recited in claims 1 and 12.

Claims 1 and 12, as amended, include steps of inserting at least one displacement into a mold and infiltrating powdered tungsten carbide with a binder alloy in the mold.

Applicant respectfully notes that section 2173.02 of the *MPEP* requires that the definiteness of claim language be analyzed, not in a vacuum, but in light of several factors including the particular application disclosure and the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. Further, the test for definiteness is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed.Cir.1986).

Turning to the present application disclosure, page 1, paragraph [0007] of the published application states, “A common practice in molding PDC bit bodies is to include in the mold at each of the to-be-formed cutter mounting positions, a shaping element called a ‘displacement.’” The same paragraph also states, “The displacement forms the shape of the

cutter mounting positions during the bit body molding process.” Page 2, paragraph [0017] of the published application states that the bit body forming process “includes insertion of plugs, called ‘displacements,’ in locations about the bit body on which cutting elements are to be mounted to the finished bit body. The locations at which cutting elements are to be mounted are referred to for convenience herein as ‘mounting pads.’” Similar explanations of the use of displacements to form the mounting pads are included throughout the specification.

When read in light of the disclosure in the specification, a person skilled in the art of manufacture and design of matrix drill bit bodies would understand that the mounting pads of claims 1 and 12 may be formed in the bit body via infiltration once the bit body is formed in the mold via infiltration and a resulting mounting pad having a cavity shaped substantially similar to the displacement geometry at each displacement location is formed in the bit body.

With respect to items 2 and 7, the Examiner asserts that it is not clear how the relief groove is formed, as recited in claims 1 and 12.

Page 1, paragraph [0010] of the published application states, “The mold has therein at least one displacement.... The displacement comprises a substantially cylindrical body having ... a projection adapted to form a relief groove under a position of a diamond table forming part of the cutting element when the cutting element is mounted on the pad.”

When read in light of the specification as discussed above, a person of ordinary skill in the art would understand that the projection on the displacement forms the relief groove in the same manner that the displacement forms the mounting pad. After inserting the displacement with the projection into the mold, and infiltrating the mold, a bit body with a

mounting pad and a relief groove at each location where a displacement with a projection was placed in the mold is formed.

With respect to items 3 and 8, the Examiner asserts that it is not clear what the claim language “positioned under the diamond table of the cutting element when the cutting element is mounted on the pad,” encompasses and how the claim limitation defines any method step of forming a drill bit body.

This claim language has been amended in claims 1 and 12 to prevent confusion and to clarify that “positioned under the diamond table of the cutting element” limits the location of the relief groove. A person of ordinary skill in the art would understand that the amended claim language is part of the step of forming a relief groove in the drill bit body and serves to describe the relief groove’s location in the drill bit body.

With respect to item 4, the Examiner questions which method steps are defined by the wherein clause beginning on line 20 of claim 1.

The wherein clause beginning on line 20 of claim 1 is a limitation on the step of forming the relief groove in the drill bit body. The clause states, “wherein a width of the relief groove is selected so that the relief groove extends back from an outer surface of the drill bit body at least 40 percent of that portion of a thickness of the diamond table which does not extend past the outer surface of the drill bit body...” This claim language serves to limit the step of forming the relief groove to the formation of a relief groove with the desired width.

Page 2, paragraph [0023] of the specification section of the present patent application publication provides an explanation of this claim language that, when combined with Figure 3, would allow a person of ordinary skill in the art to understand this claim language and

remove any vagueness or ambiguity that might exist when reading the claim without the benefit of the application disclosure. Further, paragraph [0024] provides an example that uses Figure 3 and exemplary dimensional values to help clarify the dimensional limitation.

With respect to items 4 and 9, the examiner asserts that the wherein clauses beginning on line 25 of claim 1 and beginning on line 19 of claim 12 are vague and indefinite and it is not clear what method step is being defined.

Claims 1 and 12 have been amended by this reply to move these clauses within a step of the method claimed.

With respect to item 5, the Examiner asserts that claims 2-4 and 13-14 are vague and indefinite and that it is not clear what method steps of forming a drill bit body are being claimed.

Claims 3 and 4 place further limitations on the selection of the displacement, as recited in claim 1. Claims 13 and 14 place further limitations on the relief groove formed in the bit body, as recited in claim 12. When read in light of the application disclosure, a person possessing the ordinary level of skill in the art would understand the language and scope of claims 3-4 and 13-14.

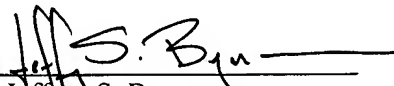
Accordingly, for at least the reasons outlined above, claims 1-12 satisfy all of the requirements of §112, in view of the knowledge possessed by a person having ordinary skill in the art. Should the Examiner seek to maintain any §112 rejections, the Applicant respectfully requests that the Examiner provide an explanation as to why a skilled artisan would find the claims indefinite.

Withdrawal of the §112 rejections is respectfully requested.

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 05516/084002).

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Respectfully submitted,

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Attachments